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Initial infant feeding decisions and duration of breastfeeding in women from English, Arabic and Chinese-speaking backgrounds in Australia

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Abstract

Anecdotally, concerns are often expressed about the varying infant feeding decisions among women from different cultural groups. This paper reports the early infant feeding decisions and duration of breastfeeding in 986 women from English, Chinese and Arabic-speaking backgrounds in Sydney during 1997 and 1998. Data were collected from an audit of medical records and through a questionnaire at eight weeks postpartum. Chinese-speaking women were less likely to express an intention to breastfeed and fewer initiated breastfeeding compared with other women. Arabic-speaking women had significantly longer duration rates compared with other women. A greater proportion of the Chinese-speaking women who initiated breastfeeding, were still breastfeeding at eight weeks compared with English-speaking women. This study suggests that there are differences in the infant feeding decisions between English, Arabic and Chinese-speaking women. Clinicians need to further understand cultural differences when providing care, education and support in a multicultural context.

Key words: breastfeeding, Arabic and Chinese-speaking women, decisions, practices

Introduction

Breastfeeding is promoted both internationally and nationally as the superior means of infant feeding. Australia's current rates of breastfeeding are approximately 80% at birth, 60% at three months of age and 40% at six months of age (Australian Bureau of Statistics 1996; Scott, Binns, Aroni 1997). Breastfeeding is however, a complex practice constructed and practiced within the social environment in which women live and variations in breastfeeding initiation and duration rates amongst different socioeconomic and cultural groups exist (Dettwyler 1995).

Australia ranks as one of the most multicultural societies in the world, due to the active support given by government to immigration during most of the last century (Rissel 1997; Australian Bureau of Statistics 1997). Compared with other host countries in the Organisation for Economic Cooperation and Development (OECD), only the United States of America, Germany and Canada have larger migrant populations. As a proportion of the total population, however, Australia has the largest migrant population of all OECD countries except Luxembourg whose relatively small migrant population of 125 000 represented one third of the total population (Australian Bureau of Statistics 1997).

Despite the recognition of Australia's multicultural population there has been very little research into the childbearing needs and infant feeding practices of women from non-English speaking backgrounds (NESB) (Manderson 1999; Yelland et al. 1997). While it is evident that women from NESB are aware of the value of breastmilk and want to breastfeed (Rossiter 1998; Westbrook 1989; Yelland et al 1997), there are conflicting reports on the breastfeeding initiation and duration rates of these women. A number of researchers have found that NESB women are less likely to breastfeed than women born in Australia (Lowe 1997; Williams & Carmichael 1983). Even where breastfeeding is considered normal in the woman's country of birth (eg, in Vietnam), early weaning and artificial feeding seems to be common following immigration to Australia (Manderson & Mathews 1981; Rossiter 1992). Others have suggested that breastfeeding rates in immigrant women parallel existing social practices and that issues such as lower education levels (Williams & Carmichael 1983) and lower socio-economic background rather than ethnicity seem likely to effect breastfeeding rates (Manderson 1999). Scott, Binns and Aroni (1997), however, found that while Asian women had lower rates of breastfeeding duration than other ethnic groups, Middle Eastern women in their sample

recorded greater rates of breastfeeding duration when compared to women born in Australia, New Zealand, and the United Kingdom.

In light of the contrasting evidence concerning the infant feeding decisions and practices in women from diverse cultural groups, we were interested in whether these differences were expressed in a cohort of women in south-eastern Sydney. We derived our cohort of women for this secondary analysis from the sample recruited for a randomised controlled trial that compared a community-based model of maternity care, known as the St George Outreach Maternity Project (STOMP), with the standard model of hospital-based care. The primary analysis of the effect of the community-based model of care demonstrated that there were no differences in intention, initiation and duration of breastfeeding between the two groups (Homer 2001).

This paper reports a secondary analysis by the three main language groups. The research question was: Do infant feeding decisions and practices differ between English, Arabic and Chinese-speaking women?

The study was approved by the Institutional Ethics Committee of the South East Health (Southern Section). The clinical and economic outcomes of the trial have been reported elsewhere (Homer, Davis & Brodie 2000; Homer et al 2001a; Homer et al 2001b).

Methods

The trial was conducted in a New South Wales public hospital situated in a metropolitan area with high levels of cultural diversity. Thirty five percent of the population are born overseas with major cultural groups being from England, Greece, China, Italy, Egypt, Hungary and Lebanon (NSW Health Department 1999). Women born in China or Hong Kong and Lebanon were the largest groups of non-English speaking childbearing women in 1998 (Nivison-Smith 1998).

Sample

A consecutive sample of women who booked for confinement at the hospital between January 1997 and April 1998 were included. Women were eligible for the trial if they were less than 24 weeks gestation at their first visit and lived in the designated catchment area. Exclusion criteria included the presence of significant maternal disease (for example, renal disease with impaired renal function, essential hypertension or

insulin dependent diabetes), two previous caesarean sections or a previous classical caesarean section.

The recruitment of a representative sample was an important aim of the study. The country of birth for all women from similar residential areas, who gave birth at the hospital during the same time period (n=1818), was compared to the women in this sample to assess representativeness. There were no differences in the cultural diversity in the study sample compared with the general population of women who were booked during this time (Homer, 2001). The intention to proportionally represent cultural diversity across the population sample was successful.

Data collection

Data were collected from the women's medical records and from self administered postal questionnaires. Data collected from the medical records included antenatal intention to breastfeed, initiation of breastfeeding and method of infant feeding on discharge from hospital. Midwifery and medical staff recorded this information during the antenatal period and in hospital. Accredited health care interpreters were used to assist with this data collection.

Questionnaires were posted to study women at eight weeks postpartum. Unfortunately not all women received a questionnaire (see Figure 1) due to administrative difficulties with addresses and distribution. The questionnaire included three questions directly relating to infant feeding; current feeding practice, duration and reasons for weaning. These questions were adapted, with permission, from previous research into maternity care in Australia and in the UK (Kenny et al 1994; Sikorski et al 1996). Non-responders were sent a reminder letter after one month.

The questionnaires were available in three languages English, Arabic and Chinese. The written script for Cantonese and Mandarin is the same so both these groups could be accommodated in the 'Chinese' version. The translations were performed by an accredited translation service and the questionnaires were checked for accuracy with a bilingual midwife and three interpreters familiar with maternity terminology. At the time of recruitment, women were asked in which language they would prefer their questionnaires.

Categorising women to cultural groups was difficult as 'culture' can be influenced by many factors such as country of birth, ethnic and religious identification and migration. In

this study, women were categorised into language groups by 'language spoken at home'. Women who spoke Cantonese or Mandarin at home were recorded as Chinese-speaking. Data were analysed according to 'language spoken at home' (referred to as language for the remainder of this paper). Country of birth was not used to categorise women, as the numbers within each country group were too small to allow meaningful analysis. Whilst women within English, Chinese and Arabic language groups were born in a number of countries, it was assumed that there would be some degree of cultural homogeneity within the language groups. For example, English-speaking women could be broadly categorised as coming from an Anglo-Saxon background, Chinese-speaking women were primarily from Mainland China or Taiwan and Arabic-speaking women were predominately from Middle Eastern countries with a strong Moslem influence, such as Lebanon and Iran. Language was also used to categorise women as it relates to the adequacy of the provision of information available through interpreter services.

Women from 'other' language groups, that is, other than English, Arabic or Chinese were excluded from this analysis as the numbers were too small and the cultural groups were considered too diverse to have a level of homogeneity within a single group. Women from other language groups spoke a range of languages including Macedonian, Vietnamese, Thai and Spanish.

Outcome measures

Breastfeeding intention was measured at the first antenatal visit. The midwife conducting the first visit asked women how they planned to feed their baby. This was documented on the women's antenatal record.

Information relating to initiation of breastfeeding and infant feeding on discharge was obtained through an audit of all women's medical records. Breastfeeding on discharge was defined as exclusive breastfeeding, partial breastfeeding or artificially (formula) feeding. Partial breastfeeding was when the infant was given some infant formula. These definitions are in line with standard international definitions (Labbok & Krasovec 1990) although the degree of 'partial breastfeeding' could not always be established.

Breastfeeding at eight weeks postpartum was measured through the self-administered postnatal questionnaire. Women were asked whether they had breastfed their baby. The three possible responses were either 'no, not at all'; 'yes but now I have completely stopped'; or 'yes, and I am still breastfeeding'. There was no further clarification on this

question. Women who had initiated breastfeeding but weaned prior to returning the questionnaire were asked about the number of weeks they had breastfed and their reasons for weaning. This final question was open ended.

Five postnatal women, who were not involved in the study, reviewed the postnatal questionnaire for understanding, logical sequencing and clarity. Their comments on improvement were included in the final revisions.

Analysis

The software package SPSS was used to analyse quantitative data. Descriptive statistics were used to represent women's intention to breastfeed as well as breastfeeding initiation and duration. Cross-tabs analysis and Chi-squared tests were used to determine differences between language groups in intention, initiation and duration of breastfeeding. An alpha level of 0.05 was used to determine statistical significance for all analyses. It has been estimated that the sample size of language groups obtained in the study has 80% power to detect a difference, due to language group, of 15% in the proportion of women who are breastfeeding.

A Kaplan-Meier procedure was used to illustrate duration of breastfeeding by language group. The Kaplan-Meier procedure is a method of estimating time-to-event models in the presence of censored cases (Everitt, 1995). In this analysis, censoring occurred when women reported weaning their infants.

Logistic regression models were constructed to determine the factors associated with a stated intention to breastfeed at the first antenatal visit, initiation of breastfeeding and continued breastfeeding at eight weeks. Adjusted odds ratios and 95% confidence intervals are presented. The covariates used in the models were those identified in a review of the literature conducted by Scott and Binns (1999) with modifications to account for the data collected. For example, smoking and socioeconomic status were omitted as these data are poorly collected in antenatal clinics and thus were not collected in the study.

Finally, women's reasons for weaning were from an open-ended section of the eight week postnatal self-administrated questionnaire. The responses were analysed using simple content analysis, that is, category coding of answers looking for common themes. One person performed the content analysis. A computer software package was not used.

Results

Sample

The study was conducted between January 1997 and December 1998. The sample included 986 women who spoke English (n=646), Arabic (n=160) or Chinese (n=180).

The response rate of Arabic-speaking women was lower than other language groups. Overall, the response rate to the questionnaire was 60% (Figure 1).

Demographic data

Chinese-speaking women were older than Arabic or English-speaking women with 28% of Chinese-speaking women aged 35 or greater compared to 8% of English-speaking and 7% of Arabic-speaking women. Arabic-speaking women booked into hospital at a mean of 16 weeks gestation, with English and Chinese speaking women booking at 15 weeks gestation. There were more primiparous women in the English and Chinese-speaking groups than Arabic-speaking. More Chinese-speaking women (73%) required interpreter services compared with Arabic-speaking women (39%). More Chinese-speaking women reported having a tertiary education and fewer Arabic-speaking women reported working outside the home. Marital status was similar between language groups (Table 2).

Intention to breastfeed and initiation of breastfeeding

In total, 884 women expressed an infant feeding intention at their first antenatal visit. Of these, 93% (n=824) stated that they intended to breastfeed. One hundred and two women (10%) were uncertain or did not have a decision recorded at their first visit. Eight-nine per cent (n=881) of women in the study initiated breastfeeding.

There were significant differences between language groups in intention ($\chi^2_4=28.4$, $p<.0001$) and initiation ($\chi^2_4=27.6$, $p<.0001$) of breastfeeding (Figure 2). Fewer Chinese speaking women (73%) expressed an intention to breastfeed at their first antenatal visit than English (88%) or Arabic-speaking (85%) women. Chinese-speaking women were less likely to initiate breastfeeding (79%) than English-speaking (91%) and Arabic-speaking (95%) women.

All the Arabic-speaking women who were uncertain or did not record their choice of infant feeding at their first antenatal visit initiated breastfeeding. Ninety percent of

English-speaking and 68% of Chinese-speaking women who were uncertain early in pregnancy also initiated breastfeeding.

Overall, 828 (84%) of women in the study were discharged from hospital either fully or partially breastfeeding. Arabic-speaking women were more likely than other women to leave hospital fully or partially breastfeeding ($\chi^2_2=12.2$, $p=0.002$).

Breastfeeding at eight weeks

At eight weeks postpartum, 60% (n=325) of women who initiated breastfeeding and responded to the questionnaire were still breastfeeding or partially breastfeeding. There were significant differences between language groups in breastfeeding at 8 weeks ($\chi^2(2)=10.5$, $p=0.005$). More Arabic-speaking women were still breastfeeding at eight weeks (79%) compared with English (57%) or Chinese-speaking women (60%) (Table 3).

Using a Kaplan-Meier procedure, a time-to-event graph was constructed for women who initiated breastfeeding by language group (Figure 2). This graph illustrates the proportion of women still breastfeeding over the first eight weeks.

Factors associated with intention, initiation and duration of breastfeeding

Logistic regression analysis was used to determine whether language was a predictor of breastfeeding after other factors known to influence breastfeeding were controlled. The factors in the analysis for 'intention to breastfeed' were parity, language, tertiary education and model of care. Nulliparity (*OR* 4.5, 95% *CI* 2.1-9.9) and a tertiary education (*OR* 3.5, 95% *CI* 1.6-7.7) predicted an 'intention to breastfeed' at the first antenatal visit. Chinese-speaking women were less likely to state that they intended to breastfeed compared to English-speaking women (*OR* 0.3, 95% *CI* 0.2-0.6).

The factors included in the analysis for 'initiation of breastfeeding' were parity, language, tertiary education, level of obstetric intervention during labour and birth, admission to special care nursery and model of care. Arabic-speaking women were more likely to initiate breastfeeding (*OR* 3.5, 95% *CI* 1.2-10.2) with Chinese-speaking women being less likely (*OR* 0.4, 95% *CI* 0.2-0.7) compared with English-speaking women. Primiparity (*OR* 2.4, 95% *CI* 1.4-4.2) and a tertiary education (*OR* 2.0, 95% *CI* 1.1-3.5) also predicted initiation of breastfeeding. Continuity of care, amount of intervention during

labour and birth and neonatal admission to special care nursery did not effect initiation of breastfeeding.

The final analysis, which examined predictors of 'breastfeeding at eight weeks' only included women who were breastfeeding at discharge from hospital (n=828). The factors in this analysis were parity, language, tertiary education, level of intervention during labour and birth, admission to the special care nursery and model of care. Primiparity was the only significant predictor of continued breastfeeding at eight weeks, however this had a negative effect (*OR 0.5, 95% CI 0.3-0.9*). This means that primiparous women were less likely to be breastfeeding at weeks when the other factors were considered.

Cessation of breastfeeding

Of the 239 women who initiated breastfeeding but reported weaning, 203 (85%) chose to write their reason for this decision in an open-ended response. Only nine Arabic-speaking women gave reasons for weaning. These numbers were considered too small to warrant inclusion in this section.

One hundred and ninety four women were from English and Chinese-speaking backgrounds. The most common reason was 'not enough milk', although this ranged between 42% and 56% across the two language groups. Other reasons for weaning are summarised in Table 3.

Discussion

Research has suggested that women from NESB are less likely to breastfeed than women born in Australia (Lowe 1997; Williams & Carmichael 1983). Even where breastfeeding is considered normal in the woman's country of birth, it appears that early weaning and artificial feeding is common following immigration to Australia (Manderson & Mathews 1981; Rossiter 1992). The purpose of this research was to describe the infant feeding decisions of different language groups in an urban hospital in Sydney.

In this study, fewer Chinese-speaking women stated an intention to breastfeed, however more of those who did initiate were breastfeeding at eight weeks compared with English-speaking women. It is possible that Chinese-speaking women were more comfortable with registering a decision not to breastfeed than English-speaking women. Amongst Asian groups it has been found that there is a perception that Australian women do not breastfeed because they are not seen to do so in public, and that formula feeding is

readily available and the 'norm' in Australia (Rossiter 1992; Sheehan 2000). Paradoxically it could be suggested that a perceived societal pressure on some English-speaking women may have meant they stated an intention to breastfeed, and subsequently did so, but were somewhat ambivalent about this decision and had a lower threshold for weaning. Clearly, more research in this area is important to better understand the cultural factors that influence intention and duration.

Chinese-speaking women were less likely to initiate breastfeeding, or be breastfeeding on discharge, whereas, Arabic-speaking women were most likely to initiate breastfeeding and be breastfeeding on discharge. These findings are consistent with the findings of Scott, Binns and Aroni (1997) who reported lower breastfeeding duration rates among Asian women and higher rates in Middle Eastern women. While the overall initiation rate was 89%, which is in line with the breastfeeding goals and targets set by the Australian government (Commonwealth Department of Health 1993), the Chinese group was well below this rate with only 79% of Chinese-speaking women initiating breastfeeding.

Lower breastfeeding rates amongst some migrant groups have been attributed to the transition from an extended to a nuclear family, an increased interest in Western mores, a need to work or study and the availability of infant formula (James, James & Probart 1994). Religion and cultural health beliefs are also considered to influence breastfeeding practices. Amongst Asian groups in particular, traditional confinement foods and rituals are important (Fok 1996; Rossiter 1992) and an inability to practice these can influence breastfeeding initiation and duration (Rossiter 1998). Gatrad (1994) suggests because breastfeeding is encouraged by Islamic teachings this may positively effect breastfeeding rates amongst Moslem groups. Other research, has suggested that lower education levels and lower socio-economic backgrounds may effect breastfeeding rates more strongly than ethnicity (Manderson 1999; Williams & Carmichael 1983). In our study, education levels did not appear to heavily influence breastfeeding initiation as the Chinese women reported higher levels of tertiary education but the lowest levels of breastfeeding initiation. Socio-economic status was not measured definitively in this study so no conclusions can be drawn as to its effect on breastfeeding rates. It has however been recognised that recent immigrants are more likely to have lower socioeconomic status when compared to Australian-born families (Alcorso & Schofield 1992). Another explanation for the differences seen between language groups may be

related to the type of women who migrate to a western country such as Australia. It is possible that these women are not typical of women in their country of origin and this may reflect their infant feeding decisions and practices.

Another reason for the lower breastfeeding initiation rates amongst Chinese women could be a lack of appropriate culturally specific breastfeeding education and materials. Other research has shown that a culture and language specific program to promote breastfeeding was able to increase knowledge, positive attitudes, intended and actual behaviour about breastfeeding (Rossiter 1994).

Apart from the reason “did not like breastfeeding”, the reasons given by women in this study for ceasing breastfeeding were similar to reasons given in other research (Bailey & Sherriff 1993; Cox & Turnbull 1994; Hailes & Wellard 2000; Scott, Binns & Aroni 1999). Low supply has been cited in the literature as one of the most common reasons for early cessation of breastfeeding (Bailey & Sherriff 1993; Cox & Turnbull 1994; Fetherston 1995; Stamp & Crowther 1995). Recent research in Chinese-speaking women in Sydney also identified low milk supply and the belief that bottle feeding was ‘easier’ as factors that influenced their decision to wean (Diong, Johnson & Langdon 2000). The results of our study confirm these findings, although the numbers of women, particularly in the Arabic-speaking group, were small. More research into the reasons why women cease breastfeeding, particularly the issues around women stating that they did ‘not have enough milk’ should be explored further. We are currently conducting further research in this area with Chinese speaking women, endeavoring whether additional culturally appropriate support and education can increase duration rates.

The data were collected from self-reporting questionnaires, medical records and during a first antenatal visit. We acknowledge that there are biases inherent in these methods of data collection. For example, some women may be reluctant to report whether they have ceased breastfeeding in a questionnaire, there may be errors in the recording of intention to breastfeed in the medical records. However, it is likely that these would be similar across all language groups and so a comparison is still possible. We are only able to speculate on possible reasons for the differences in intention, initiation and duration. A variety of ethnic, cultural and religious factors may have influenced the results. The difficulty with categorising these factors is one of the limitations of this research.

Conclusion

This paper reports a secondary analysis of a primary randomised controlled trial. As this is a secondary analysis, the results should be interpreted with some caution. Nonetheless, the data suggests that there are differences between the breastfeeding decisions and practices of women from English, Chinese and Arabic-speaking backgrounds. This study contributes to the knowledge about women from NESB in relation to infant feeding in Australia.

Further research into social, cultural, ethnic, language and religious factors which influence breastfeeding in Australia is required to improve the breastfeeding support provided to women by midwives, early childhood nurses and general practitioners.

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Figure 1: Flow chart illustrating the sample, language groups, and distribution and response to postnatal questionnaire.

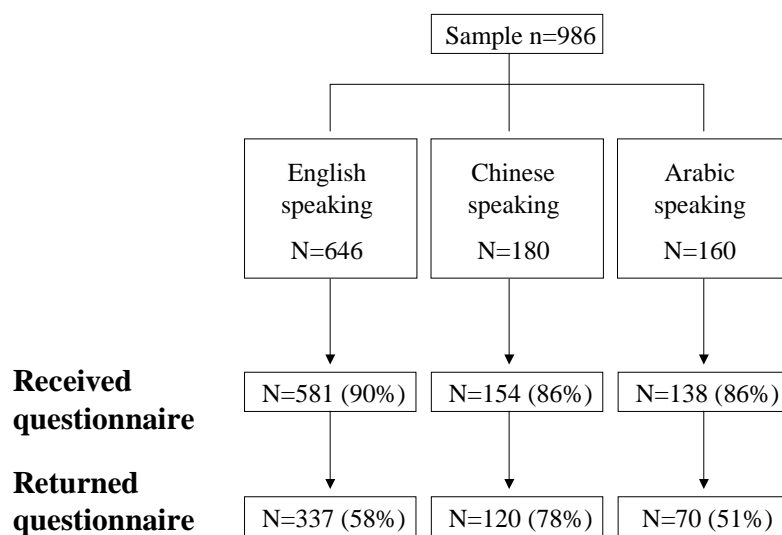


Table 1 Demographic variables by language group

	English	Chinese	Arabic
	n=646	n=180	n=160
Age in years [mean (SD)]	27 (5)	32 (4)	27 (5)
Weeks gestation at booking [mean (SD)]	15 (4)	15 (3)	16 (4)
Interpreter needed [n (%)]	0	134 (73)	68 (39)
Primiparous [n (%)]	338 (52)	80 (44)	45 (28)
Married/defacto [n (%)]	600 (93)	176 (98)	152 (95)
Employed outside the home [n (%)]	382 (59)	74 (41)	28 (17)
Tertiary education [n (%)]	168 (40)	74 (51)	28 (27)

Table 2 Reasons for cessation of breastfeeding for English and Chinese-speaking women. Primary reason is given.

	English	Chinese
	n (%)	n (%)
"Not enough milk"	69 (42)	17 (57)
Did not like breastfeeding	15 (9)	1 (3)
Problems with attachment	22 (13)	0
Formula more convenient or better	7 (4)	4 (14)
Mastitis/cracked nipples	30 (8)	1 (3)
Baby too unsettled	11 (7)	1 (3)
Other	11 (7)	5 (18)
Total	164 (100)	30 (100)

*Only 9 Arabic-speaking women gave reasons for weaning. These women were not included.

Table 3 Breastfeeding status at four time points by language group.

		English n=646	Chinese n=180	Arabic n=160	Total n=986	P
Intention to BF	Yes	552 (88)	131 (73)	141 (85)	824 (83)	<0.0001
	No	34 (5)	24 (13)	2 (1)	60 (6)	
	Unknown	60 (9)	25 (14)	17 (11)	102 (10)	
BF initiated	Yes	587 (91)	142 (79)	152 (95)	881 (89)	<0.0001
	No	59 (9)	38 (21)	8 (5)	105 (11)	
BF on discharge	Yes	543 (84)	134 (75)	151 (94)	828 (84)	0.002
	No	96 (15)	42 (23)	8 (5)	146 (15)	
	Unknown	7 (1)	4 (2)	1 (<1)	12 (1)	
BF at 8 weeks (for those who initiated)	Yes	222 (57)	57 (60)	46 (79)	325 (60)	0.005

Figure 2: Proportion of women continuing to breastfeed during the first 8 weeks postpartum by language group. All women who initiated breastfeeding are included.

